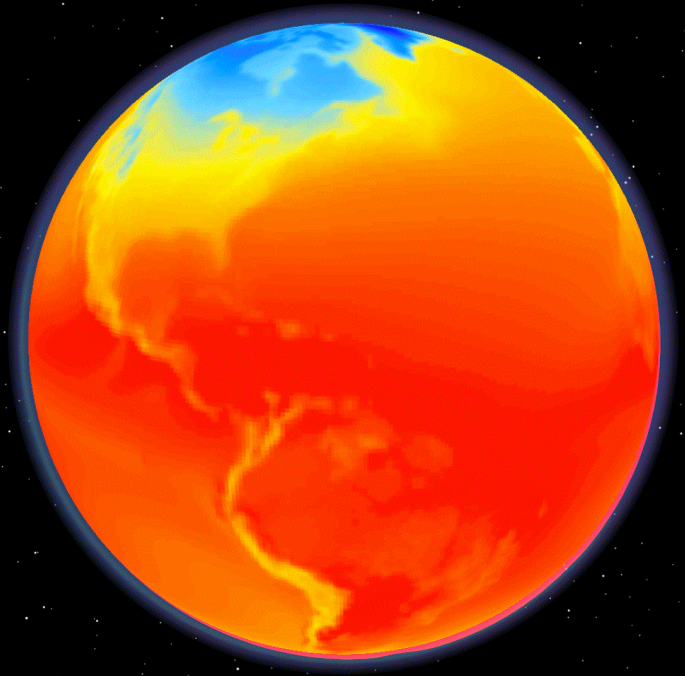
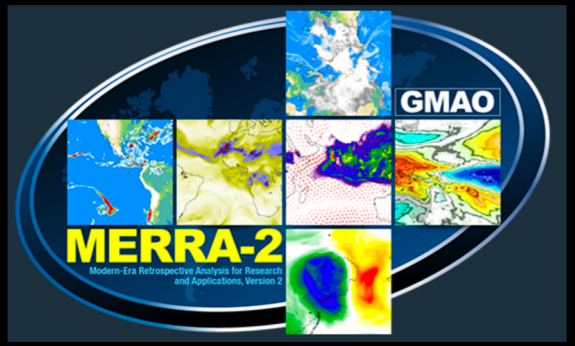
POWER UP!

Making NASA Data Available for Energy Related Societal Benefits



POWER
Prediction Of Worldwide Energy Resource

Where does the data come from?

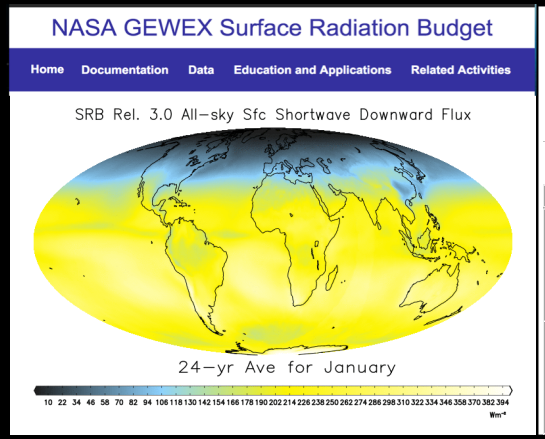


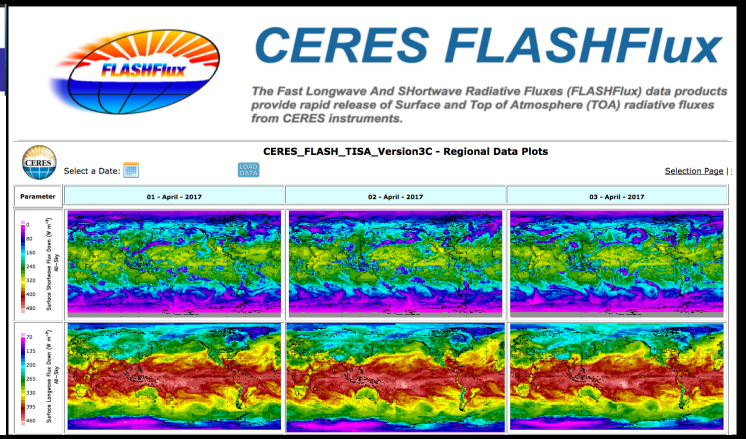
Surface meteorological data products from reanalysis

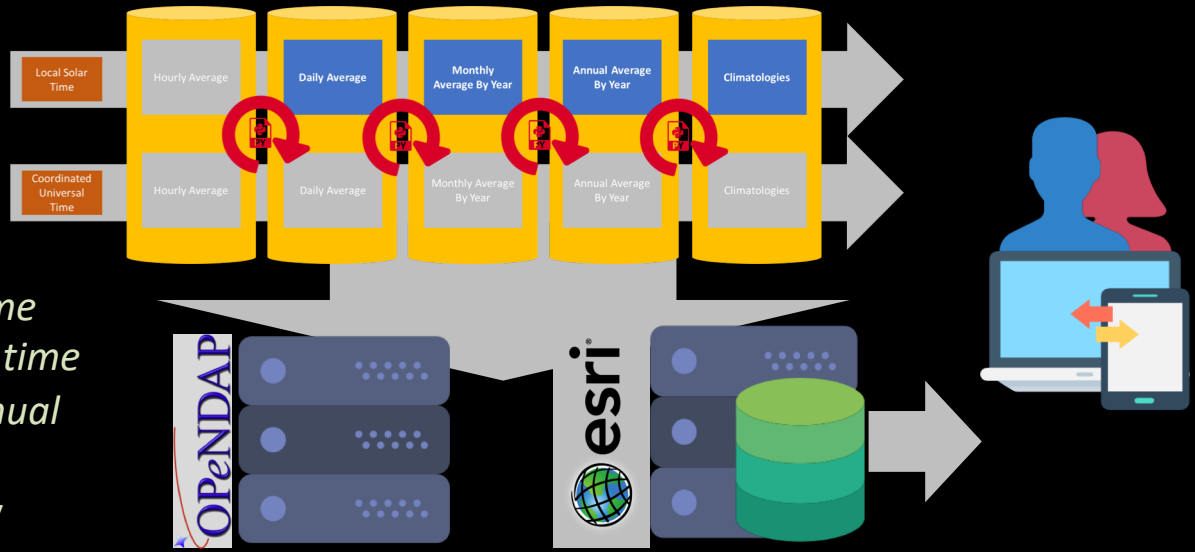
Data Products . . .

- *span July 1983 to near present time*
- *include daily, monthly and annual time series; long-term monthly and annual averages*
- *customized parameters for energy*

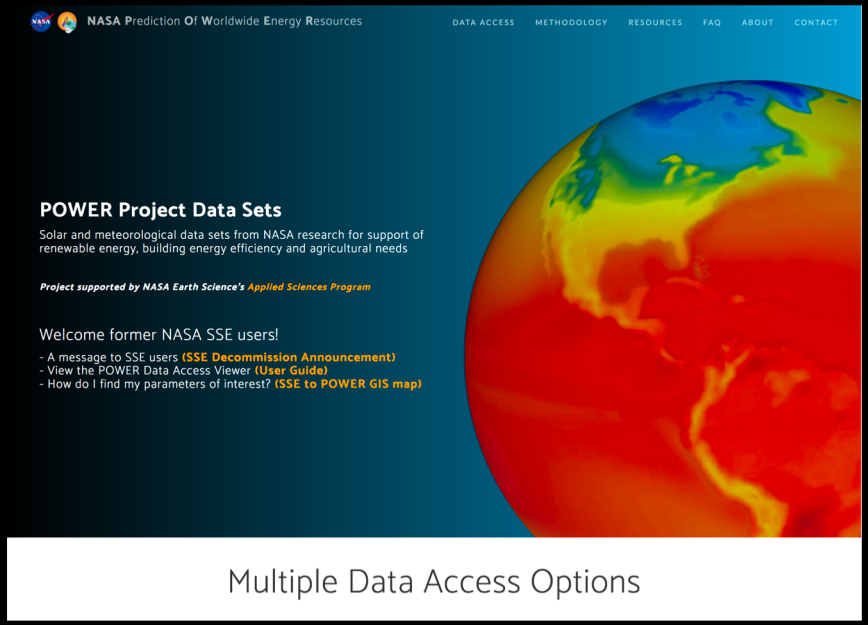
Surface solar data products from satellite analysis







How do I start?

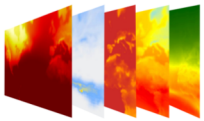


Multiple Data Access Options

Data Access Viewer

Responsive web mapping application providing data subsetting, charting, and visualization tools in an easy-to-use interface.

POWER DATA ACCESS VIEWER



ArcGIS Image Services

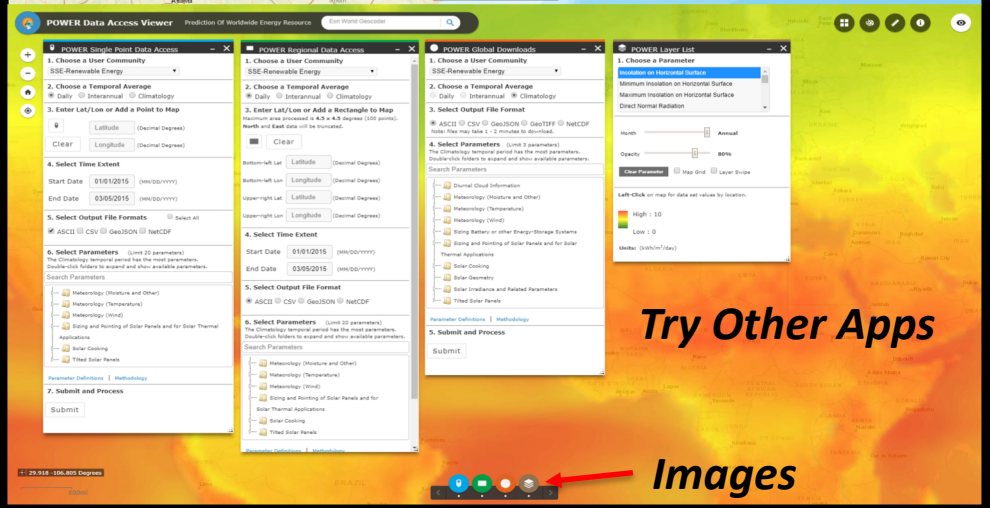
GIS-Ready Time-Enabled ArcGIS Image Services for mapping, visualization, and spatial analysis.

POWER DATA ACCESS VIEWER

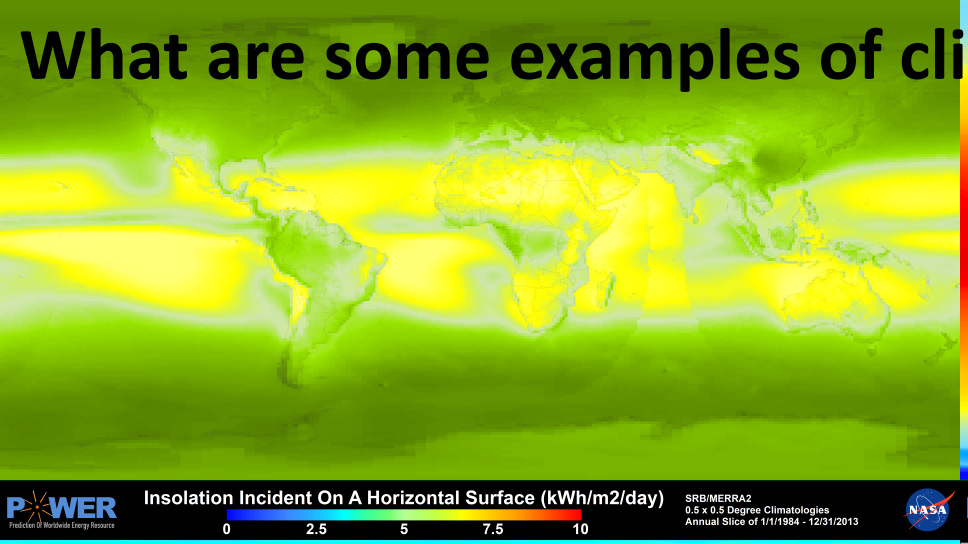
POWER API Integration

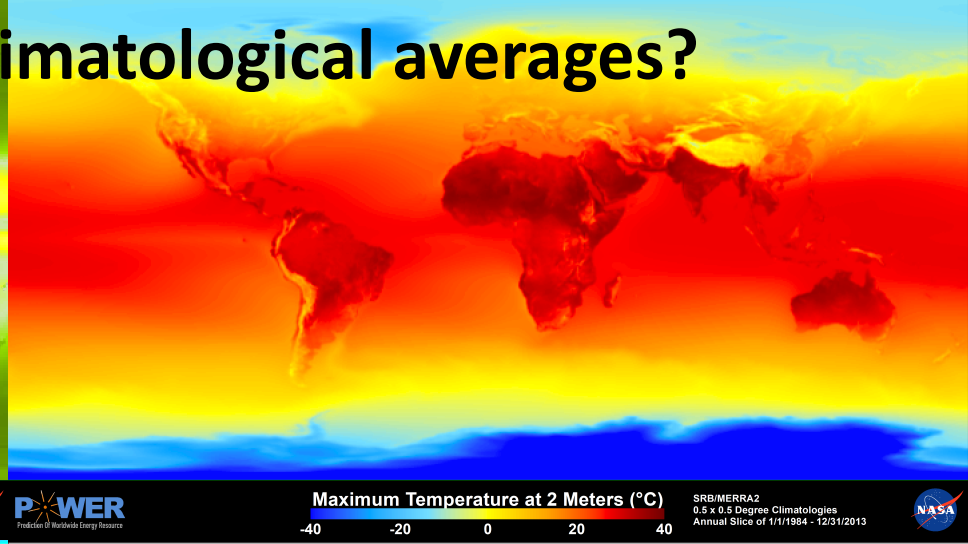
Access the POWER data holdings through your own custom scripts and scalable applications.

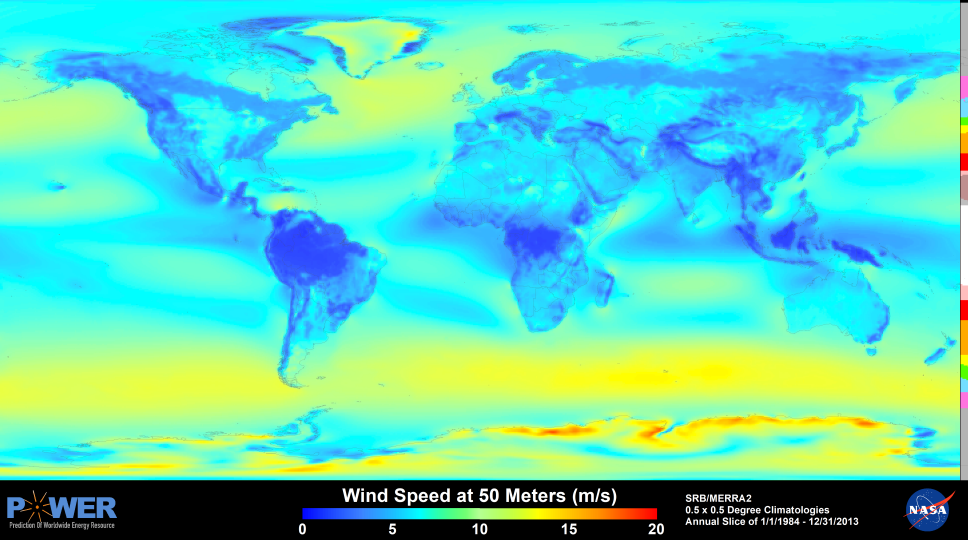
POWER API DOCUMENTATION

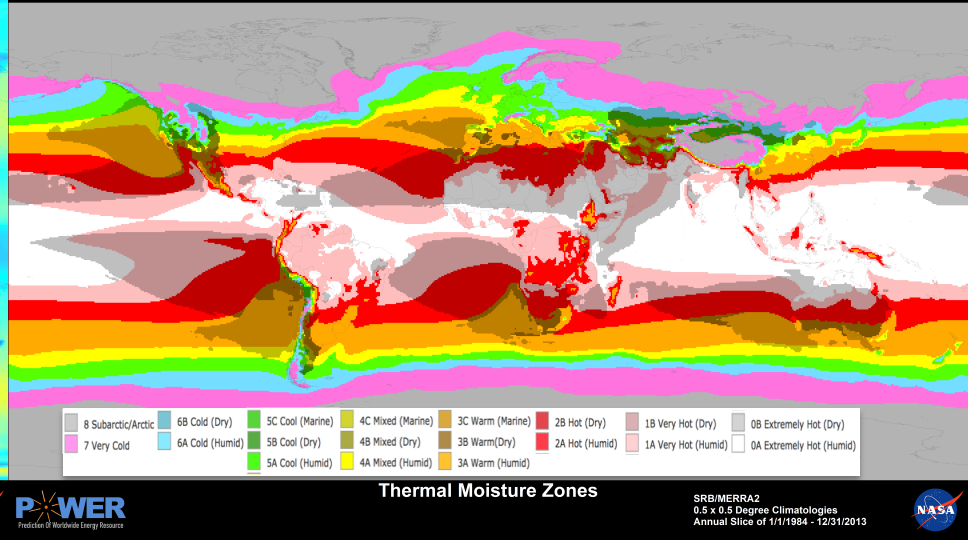


What are some examples of climatological averages?

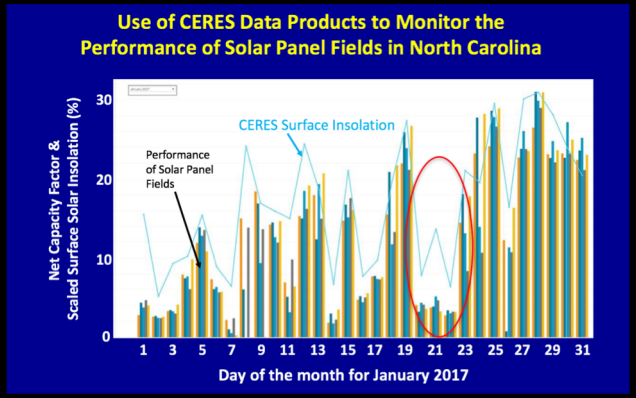






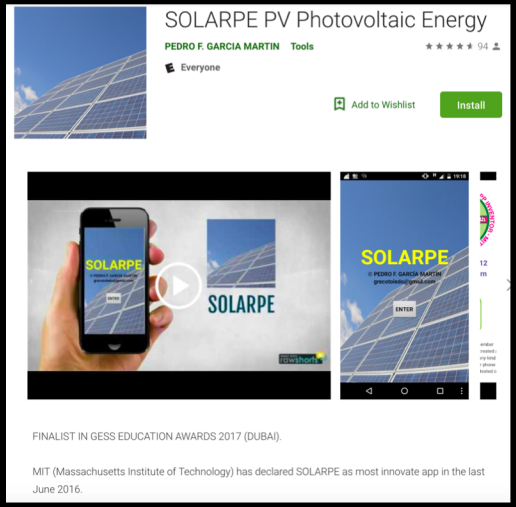


Who is using the site and why?



- **N.C./VA: Solar consultants monitor solar field performance (First Customers Renewables)**
- CA/WI/IN: Universities using for courses in agriculture (e.g., Stanford U.) and renewable energies (U. of Wisc, Purdue using RETScreen)
- LA: "I … calculate solar arrays and battery banks needed in a given location for our solar powered chemical injection pump." CheckPoint Pumps & Systems®, LA
- OR: Solar data for remote locations. SunWize Power & Battery (HQ, Albany, multiple US locations)
- TX: Data … for sizing Battery & PV systems. Scott Rayment, Voltmaster Electrical Contracting, Houston
- "POWER looks amazing and it's very useful, so thank you very much! " – Vanear Structural Technologies, Md, US

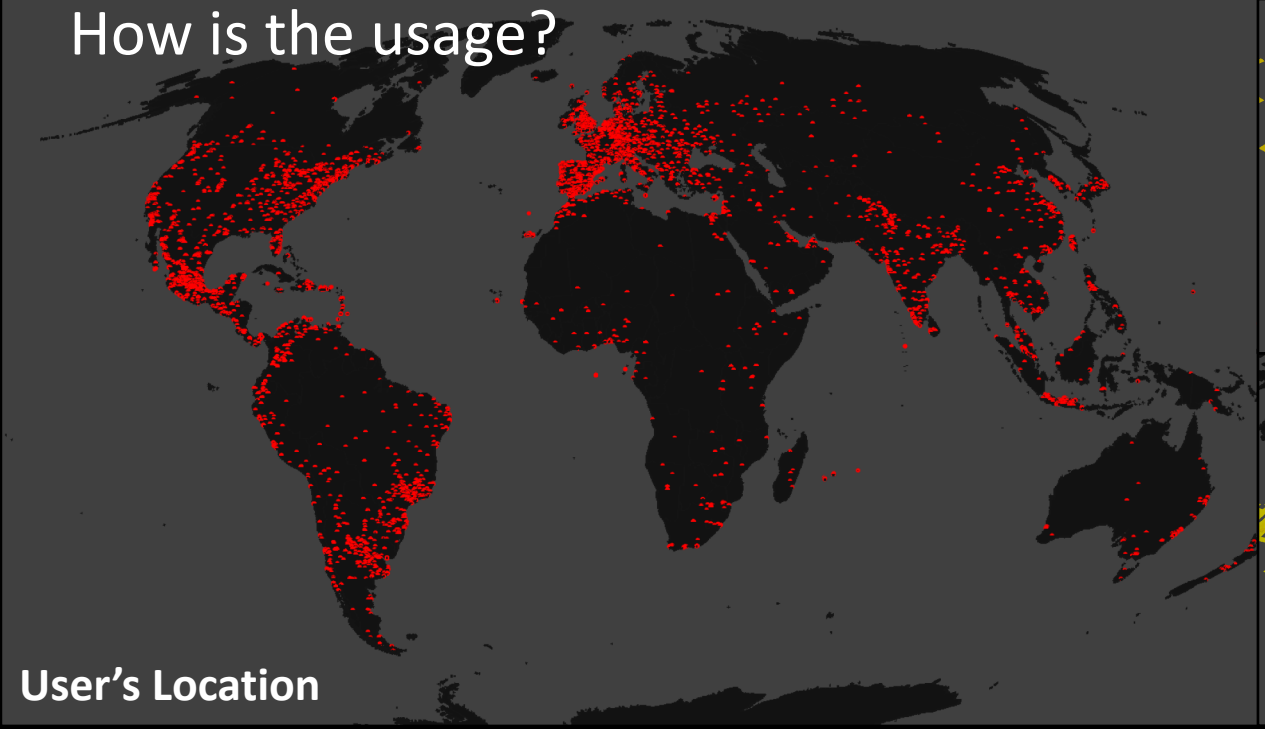
- **Spain: *Solar App (SOLARPE) for cell phone with 30,000 worldwide users. Pedro García Martín, IES Universidad Laboral of Toledo, Toledo***
- Spain: Solar geometry and Solar Noon and Daylight Hours to design solar streetlights. *Pilar Pérez Oliván, Asesora Luminotécnica, Navarra*
- Canada: Assess solar generation system performance and report to site owners. *Peter Mason, Radiant Technical Services, Ottawa.*
- Argentina: Sizing and Pointing of Solar Panels in the new POWER data portal. *Área Técnica , Goodenergy, Buenos Aires*
- Belgium: "We've been using the NASA database for Nokia's Renewable Energy solutions dimensioning." *Nokia, Antwerpen*
- Peru: Provider of solar systems in Peru and uses the POWER data to check amount of sun at a specific point. *Chavier E. Solano Isaya, Product Manager, Energía Solar y Automatización*

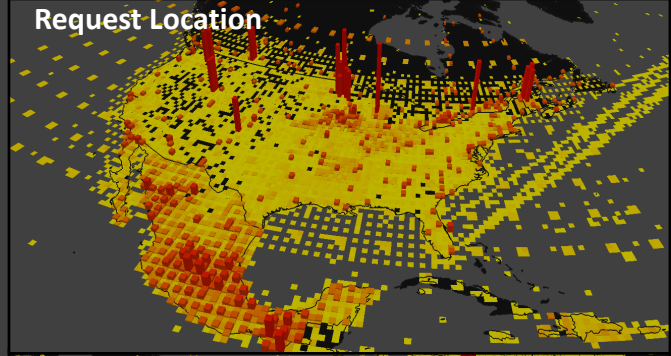


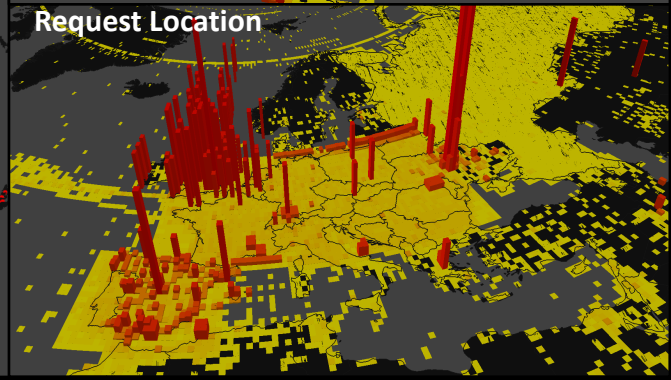
POWER Partners with RETScreen for Clean energy technology projects feasibility and evaluation

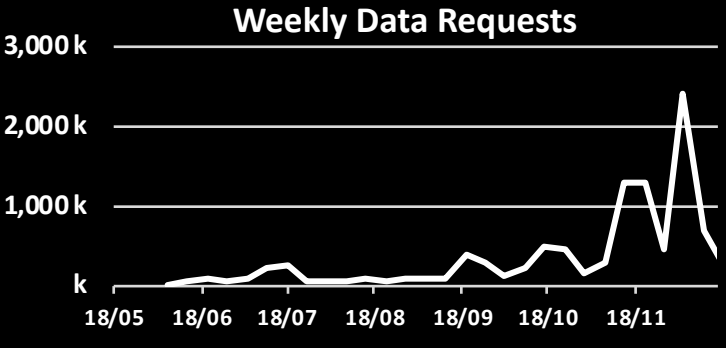
- **Alaska:** U.S. Department of Agriculture Analyzes Wood Heating in Alaska with RETScreen
- **Massachusetts and Minnesota:** RETScreen used to developed renewable energy heating and cooling scenarios for policy incentive programs including solar hot water heating, biomass heat and advanced heat pump technologies
- Michigan: University of Michigan uses RETScreen to monitor building energy efficiency and greenhouse gas emission (now Auburn U.)
- **Hawaii:** Department of Education implementing program to use RETScreen at all education buildings/schools

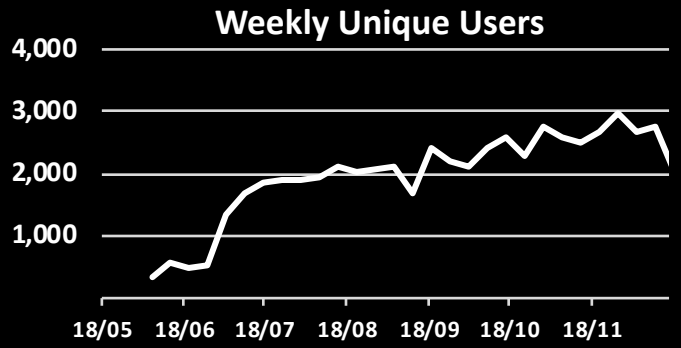
How is the usage?











Period: 5/2018 – 11/2018
Requests: 10,299,733
Unique Users: 44,256
Total Volume: 6.2 TB

POWER
Prediction Of Worldwide Energy Resource

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https://power.larc.nasa.gov

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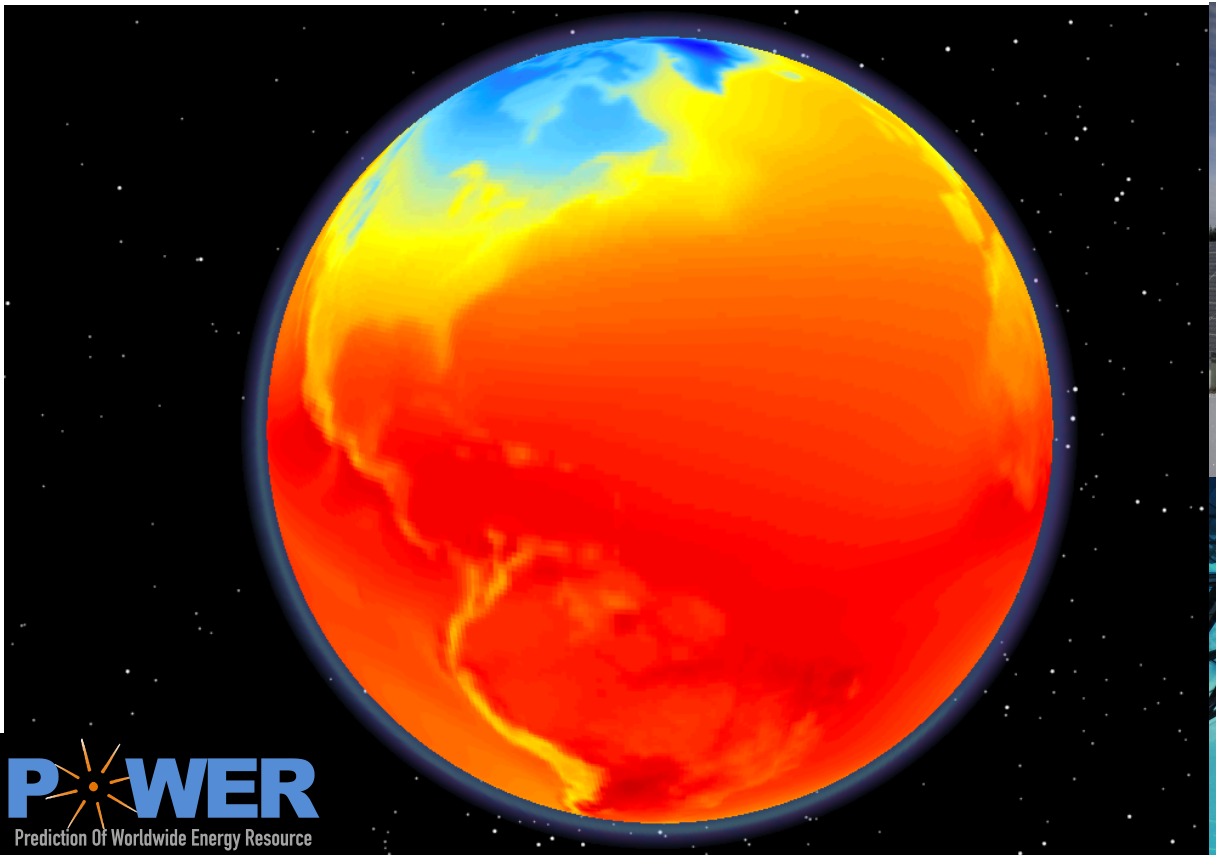
POWER
Prediction Of Worldwide Energy Resource